Tattoos, body piercings, and skin adornments have a long and fascinating history. Interestingly, the “Iceman” who was recovered in the frozen mountains of Northern Italy, displayed tattoos dating back almost 5,300 years (Bahn & Everett, 1993). Tattoos have also been noted on Egyptian mummies. The remarkable scarification rituals of African tribes hold great interest for dermatologists because, while Africans find these scars and keloids to be signs of beauty, Americans of African descent often present to their dermatologists for the treatment and removal of their keloids. It has been postulated that the “tribal” designs of the tattoos of New Guinea, New Zealand, and the South Pacific actually had their beginnings in the characteristic skin markings of the dermatophyte *Trichophyton concentricum* which causes tinea imbricata or “Tokelau.” The influence of these swirls within swirls is seen not only in their tattoos but also in the art of this area.

The purpose of this article is to provide an overview of the dermatologic implications of tattooing, body piercing, and scarification (see Table 1).

**Tattoos**

There are four major types of tattoos: traumatic, amateur, professional, and cosmetic.

*Traumatic* tattoos are caused by the unwanted imbedding of dirt or debris beneath the skin which leaves an area of pigmentation after healing. This commonly occurs in “road rash” after a motorcycle accident or after a puncture injury from a pencil called a “graphite tattoo” (see Figure 1).

*Amateur* tattoos are placed by the persons themselves or by their friends and often show very little artistry or detail. The most common method is placing India Ink beneath the skin with a pin. Others will use pen ink, charcoal, or ashes as the pigment.

*Professional* tattoos take two forms: cultural and modern. Cultural tattoos are placed using the time-honored method of a certain cultural ethnicity. The tattoos of the South Pacific Islands are placed by this method and display the artistry of their particular heritage. Modern tattoos are performed using the “tattoo gun” and are placed by experienced artists who are paid for their work. Modern tattoos use a variety of pigments and their artistry varies from poor to fantastic (see Figures 2 & 3).

*Cosmetic* tattooing is a rapidly growing area of the tattoo industry. Permanent makeup can be placed by a tattoo artist including eyeliner, lip liner, lipstick, rouge, and eyebrow pencil. Another aspect of cosmetic tattooing is the camouflage of vitiligo, the replacement of a nipple on a post-surgical breast, and the camouflage of an undesired tattoo.

The tattoo has long held negative connotations and is even forbidden in the Old Testament. In Leviticus 19:28 it says “Ye shall not make any cuttings in your flesh for the dead nor print any marks upon you. I am the Lord.” Interestingly, the two words that entered the English language from Tahiti are “tattoo” and “taboo.”

In the 1800s, Sir William Osler...
viewed the presence of a tattoo on a patient as a sure sign of syphilis. He stated, "I often think that if I look closely enough at tattooings, I can see the track of the spirochete!" (MacDermot, 1971). From that time, tattoos have been considered a marker of a patient as a "risk-taker" (Armstrong, Masten, & Martin, 2000).

Tattoos are often a sign for group identification and solidarity. Bikers, homosexuals, and gang members often can be recognized by their tattoos. Former prison inmates, IV drug abusers, and neo-Nazis may also have distinctive tattoos. Probably the most unforgettable tattoo is that which is present on the arms of the Nazi concentration camp survivors (Goldstein, Muller, & Tuttle, 1979). This testament to man’s inhumanity to man is immortalized at the Holocaust Memorial in Miami Beach (see Figure 4).

**Tattoo Complications**

There are complications of tattooing of which the dermatology health care providers should be aware. Infections may occur directly after tattooing (Braithwaite, Stephens, Sterk, & Braithwaite, 1999). Often the initial breaking of the skin barrier may lead to impetigo or cellulitis. The risk of bloodborne diseases (HBV, HCV, HIV) is tantamount and because Universal Precautions have been embraced by tattoo parlors, there has been no documented spread of HIV by *professional* tattooing.

Patients may develop hypersensitivity to tattoo pigments; most commonly the red color from a reactive pigment called cinnabar. There has also been concern about tissue trauma and misdiagnoses from iron oxide and heavy metal pigments in patients who undergo magnet resonance imaging. Scarring and keloid formation are other bothersome complications of tattooing (see Figure 5).

The removal of tattoos has a varied history and is still not optimum, despite much improvement and media reports otherwise. Treatments include excision of the tattoo, salabrasion, dermabrasion, cosmetic

**Tattoos, Body Piercing, and Skin Adornments: Patient/Family Education**

<table>
<thead>
<tr>
<th>Tattoos</th>
<th>Body Piercing</th>
<th>Scarification</th>
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<tbody>
<tr>
<td>Four types of tattoos:</td>
<td>Jewelry is worn through the skin. Common piercings: ears and navel. Extreme piercings: eyebrows, nipples, lips, tongue, and genitals.</td>
<td>Designs are placed in the skin forming permanent scars.</td>
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<td><em>Traumatic</em> — Caused by accidental imbedding of colored material such as dirt, which leaves an area of pigmentation after healing. Example: &quot;Graphite tattoo&quot; from a puncture injury with a pencil.</td>
<td><em>Branding</em> — Design is made by burning the skin.</td>
<td><em>Artificial penile nodules</em> — Inert material placed beneath the skin of the penis for reported sexual enhancement.</td>
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<tr>
<td><em>Amateur</em> — Usually placed by the person themselves or by a friend with little experience and very little artistry. Example: boyfriend’s name or gang tattoo.</td>
<td><em>Cutting</em> — Design is made by cutting the skin.</td>
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over-tattoo and, of course, laser. Despite fantastic laser work on a minority of patients, the treatment of tattoos with lasers may have poor results, cannot be predicted with true accuracy, and may require multiple expensive sessions. This often leaves the patient with high expectations frustrated and unhappy.

In 1979, Murray Zimmerman warned against the litigious nature of tattoo patients. He stated, “I have a perfect solution to the threat of incurring suits for the alleged unsightly scars resulting from removal of tattoos. That perfect solution is this: Don’t undertake removal of tattoos”(Zimmerman, 1979).

**Body Piercing**

Body piercing is another form of skin adornment where jewelry is worn through the skin. Female ear piercing has long been accepted in Western culture but in the last 25 years, male ear piercing and the piercing of other areas has become widespread. Navel piercing has become fashionable and more extreme piercings of the eyebrows, nipples, lips, tongue, and genitals has become common (see Figure 6). Oral and genital piercing is often associated with sexual connotations (Scully & Chen, 1994).

Anytime the skin is broken for a piercing, there is a risk of infection. Abscess formation, chondritis of the ears
(Cosette, 1993; Tukelaub & Habal, 1990), candidal infection, even toxic shock syndrome and sepsis (McCarthy & Peoples, 1988) have been reported. The risk of blood-borne diseases (HIV, HBV, HCV) is higher among amateur piercers who do not properly clean their equipment.

The skin may also grow over jewelry that is embedding too tight. Many people are hypersensitive to the nickel in some jewelry and may develop a chronic dermatitis. These patients should only wear silver, gold, or platinum jewelry. The unwanted forcible removal of jewelry during trauma may lead to a permanent deformity that cannot be rectified without surgery. Trauma to the teeth requiring restorative dentistry may also be caused by oral jewelry (Scully & Chen, 1994).

**Scarification**

The most common complication of piercing is the development of keloids. This is seen frequently in Americans of African descent. Treatment of keloids can often be frustrating and depends largely on surgery and/or intralesional steroids. There have also been reports of the use of cryosurgery and intralesional interferon.

In another method of skin adornment, keloid formation is desirable. Scarification is a skin adornment that takes two forms: branding and cutting. In these methods, the more permanent the scar, the better the result. Branding is the use of a hot metal design, which burns the design into the skin (see Figure 7). This is a recognized ritual behavior in some college fraternities. Cuttings are also done in the skin using a sharp knife or scalpel to leave permanent scarifications.

Artificial penile nodules are made by placing inert foreign material (plastic beads, pearls, etc.) beneath the skin of the penis (see Figure 8). These are placed in the hopes of providing greater pleasure to sexual partners.

This skin adornment seems to have originated in Asia and has been called by a variety of names. These names include penis marbles (Fiji) (Norton, 1983), Bulleteus (Philippines) (Sugaihara, 1987), Chagan balls (Korea), Tancho’s nodules (Japan) (Kikuchi, Michimoto, & Nakashima, 1984) and Apradravyas (India).

The history of skin adornments is long and interesting but the future is bound to be even more fascinating to dermatology health care professionals and those who study the skin.

**References**


An estimated 5.6 million healthcare workers are at risk of occupational exposure to bloodborne pathogens, including HIV, the hepatitis B and C viruses, and other potentially infectious agents.

The primary route of exposure? **Needlestick injuries (NSIs).**

Although the use of needleless IV systems and “safety” needles remains the primary prevention tool to control NSIs, the use of rigid sharps disposal containers in the health care environment has been demonstrated to reduce these injuries. But what should you consider when selecting or evaluating a sharps disposal container as part of an overall NSI prevention plan?

To answer that question, the National Institute for Occupational Safety and Health (NIOSH) has published **Selecting, Evaluating, and Using Sharps Disposal Containers** (DHHS [NIOSH] Publication No. 97–111). To receive a free copy, call NIOSH toll-free at 1–800–35–NIOSH (1–800–356–4674) or visit the NIOSH Homepage at [http://www.cdc.gov/niosh/homepage.html](http://www.cdc.gov/niosh/homepage.html).